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WATER SUPPLY OUTLOOK FOR MONTANA

U.S. DEPT. OF AGRICULTURE
NATIONAL WATER RESEARCH INSTITUTE

JUL 17 1967

CURRENT NEWS RECORDS

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE,

and
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

**MAY 15, JUNE 1, 1967
and
SPECIAL MEASUREMENTS**

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data or reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

PUBLISHED BY SOIL CONSERVATION SERVICE

D. A. WILLIAMS, Administrator

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 507, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85205
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	P. O. Box 38, Boise, Idaho 83701
Montana	P. O. Box 855, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4001 Federal Building, Salt Lake City, Utah 84111
Washington	840 Bon Marche Bldg., Spokane, Washington 99206
Wyoming	P. O. Box 340, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

For

MONTANA

Report Prepared

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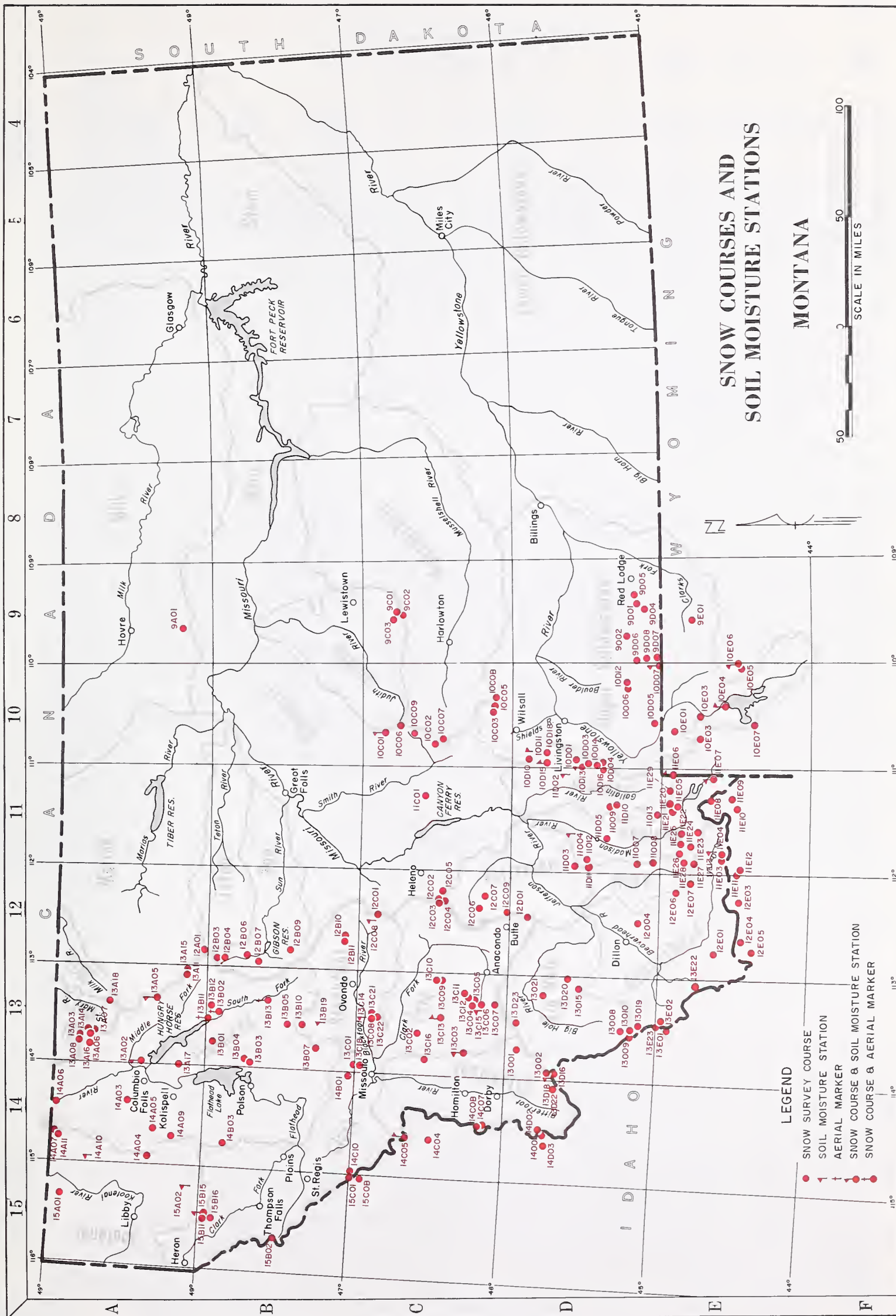
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MONTANA
WATER SUPPLY OUTLOOK
June 1, 1967

The snow pack continued to increase through mid-May and resulted in additional May 15 snow surveys being made.

Snow melt conditions the last half of May have been almost ideal for dissipating the large snow pack, particularly the lingering low elevation snow. However, soils are quite wet and would be capable of producing a large runoff if heavy rainfall occurs. The high elevation snow pack is presently above average but should present no problem so far as high water, as it is confined to relatively small areas.

Upon completion of the melt season, curves for all Montana snow pillows in operation during this season will be printed and distributed to those on our regular State bulletin mailing list.



SNOW COURSES AND SOIL MOISTURE STATIONS

MONTANA



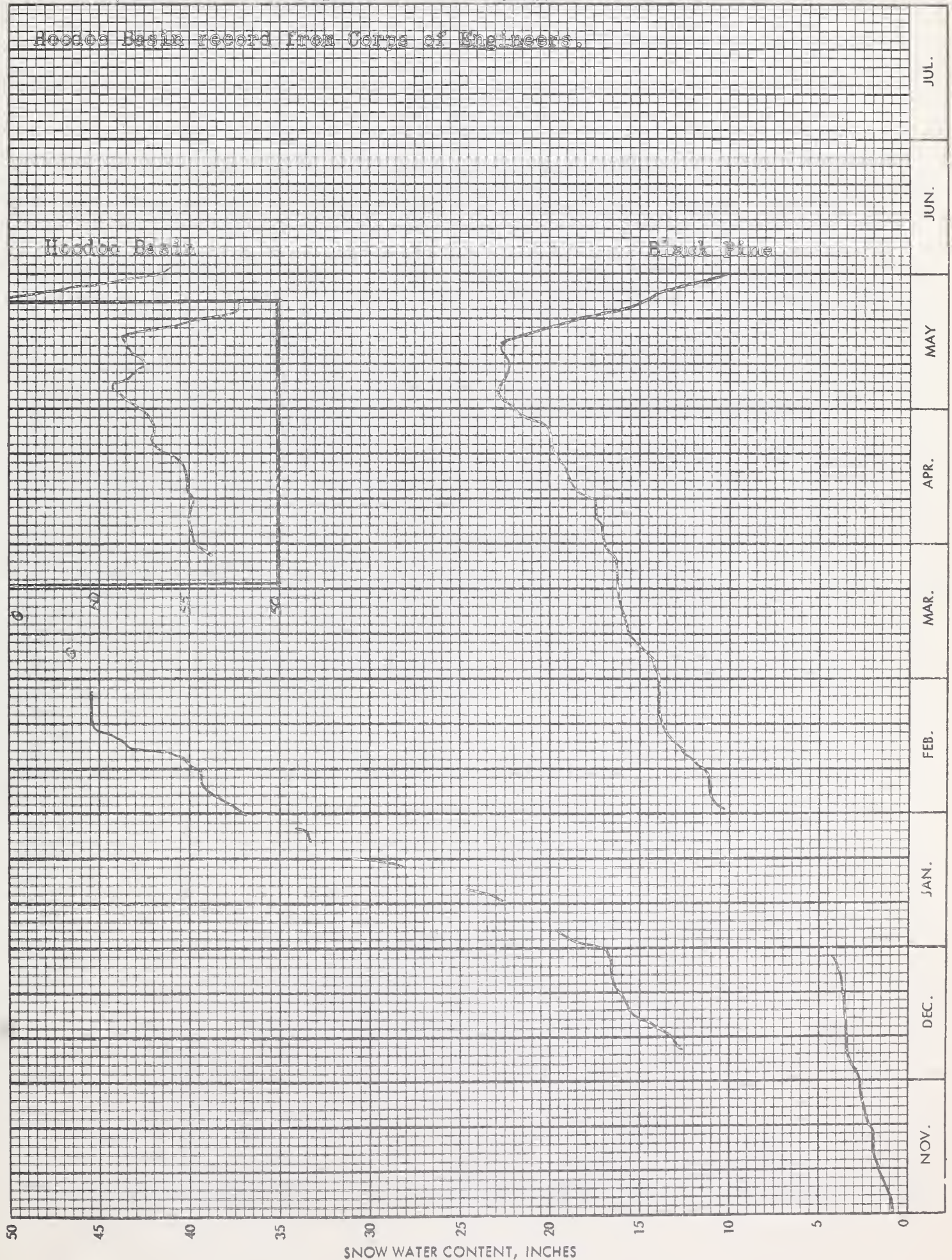
LEGEND

- SNOW SURVEY COURSE
- ▲ SOIL MOISTURE STATION
- ✕ AERIAL MARKER
- SNOW COURSE & SOIL MOISTURE STATION

HOODOO BASIN & BLACK PINE SNOW PILLOW DATA

AS OF JUNE 1, 1967

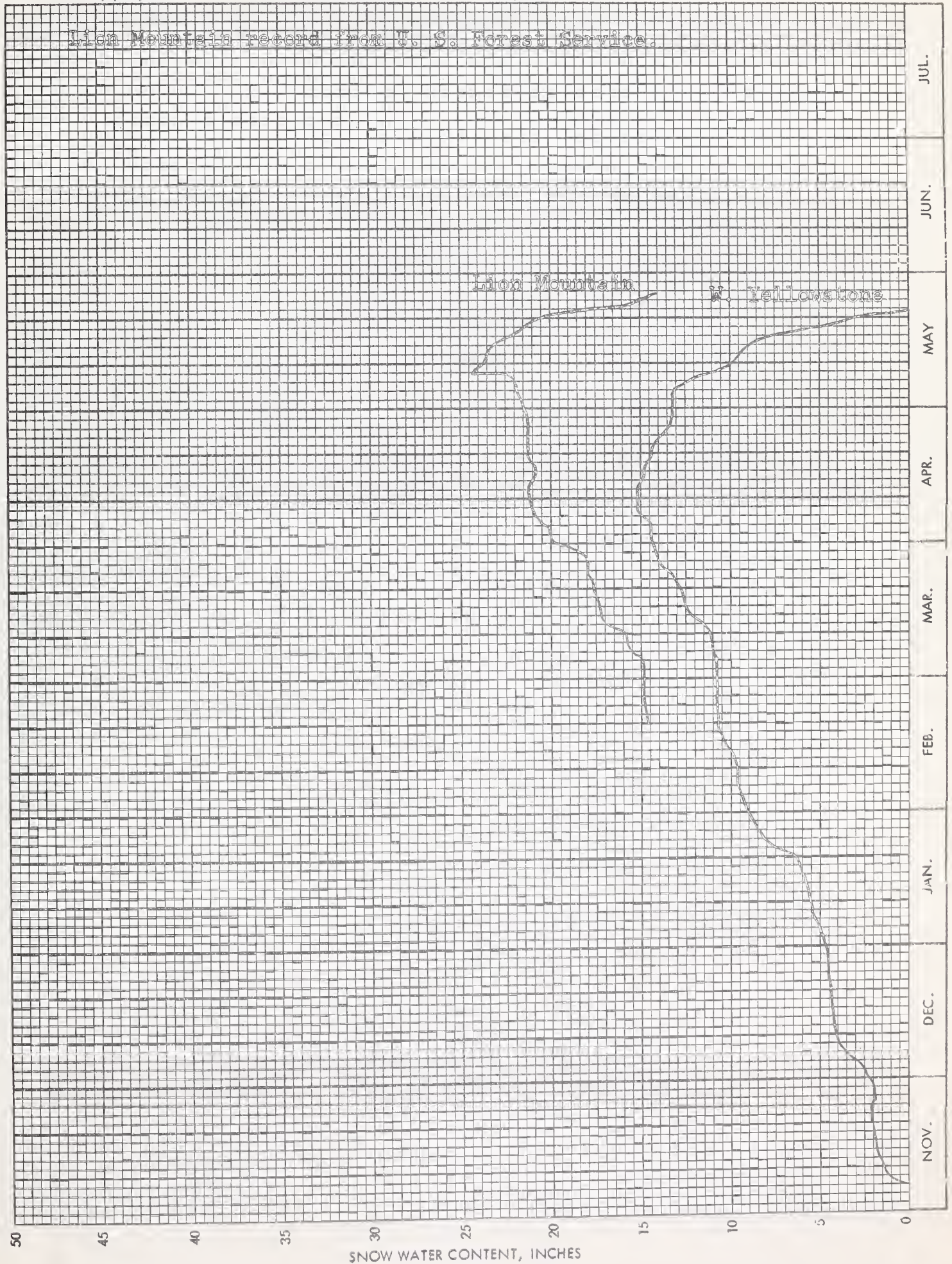
Hoodoo Basin	-	Sec.	<u>17</u>	T.	<u>14N</u>	R.	<u>27W</u>	No.	<u>15008</u>	Drainage:	<u>Clark Fork</u>
Black Pine	-		<u>26</u>		<u>8N</u>		<u>15W</u>		<u>13013</u>		
Hoodoo Basin	-	Lat.	<u>46-59</u>			Long.	<u>115-02</u>	Elev.	<u>6000</u>		
Black Pine	-		<u>46-26</u>				<u>113-26</u>		<u>7000</u>		



LION MOUNTAIN & W. YELLOWSTONE SNOW PILLOW DATA

AS OF JUNE 1, 1967

Lion Mountain	-	Sec. <u>23</u>	T. <u>11S</u>	R. <u>2W</u>	No. <u>11E28</u>	Drainage: <u>Madison</u>
W. Yellowstone	-	<u>34</u>	<u>13S</u>	<u>5E</u>	<u>11E07</u>	
Lion Mountain	-	Lat. <u>44-52</u>		Long. <u>111-48</u>	Elev. <u>8760</u>	
W. Yellowstone	-	<u>44-40</u>		<u>111-06</u>	<u>6700</u>	

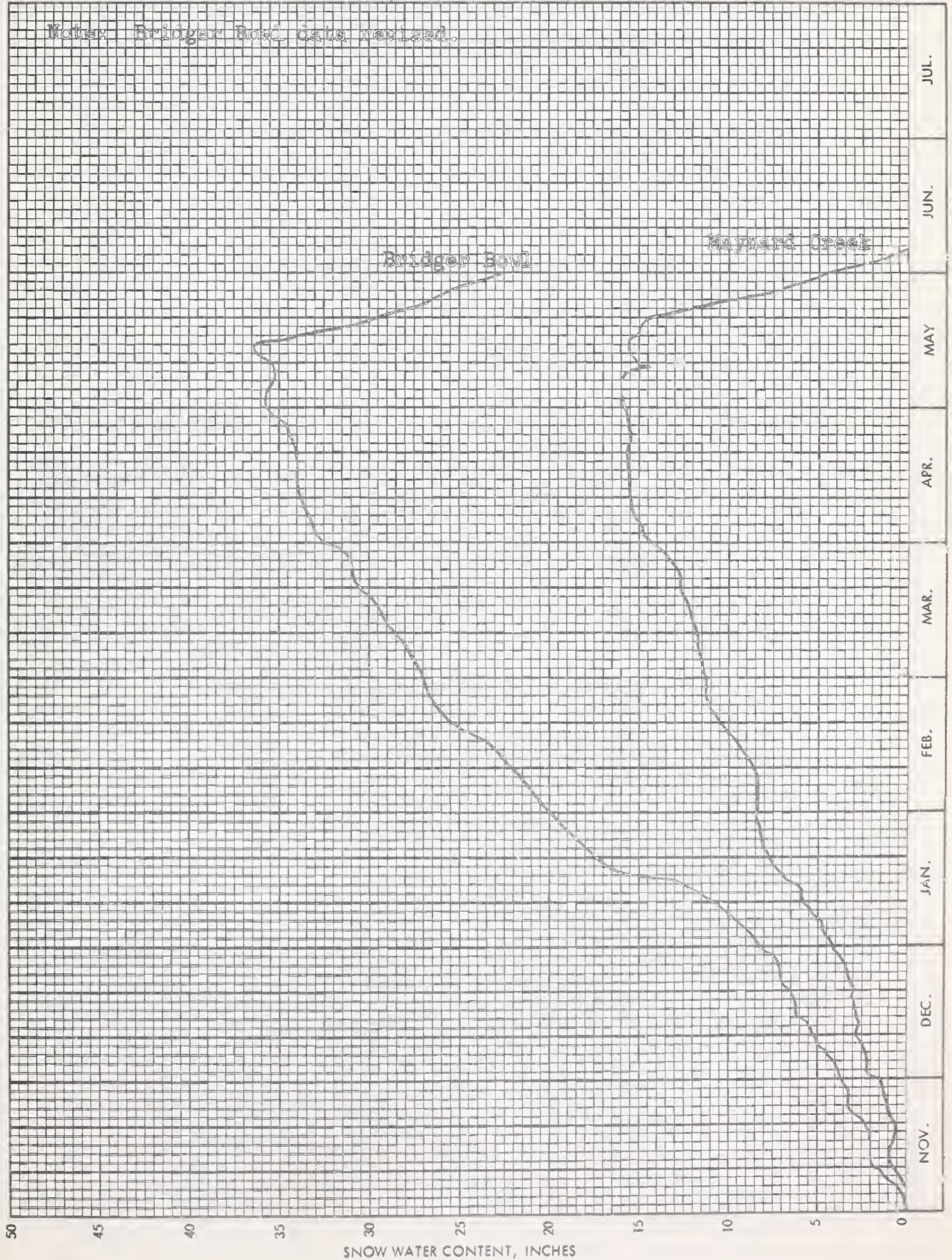


BRIDGER BOWL & MAYNARD CREEK SNOW PILLOW DATA

AS OF JUNE 1, 1967

Bridger Bowl	Sec. <u>25</u>	T. <u>1N</u>	R. <u>6E</u>	No. <u>10D15</u>	Drainage: <u>Gallatin</u>
Maynard Creek	<u>19</u>	<u>1N</u>	<u>7E</u>	<u>10D18</u>	
Bridger Bowl	Lat. <u>45-48</u>		Long. <u>110-55</u>	Elev. <u>7250</u>	
Maynard Creek	<u>45-49</u>		<u>110-54</u>	<u>6210</u>	

Note: Bridger Bowl data revised.

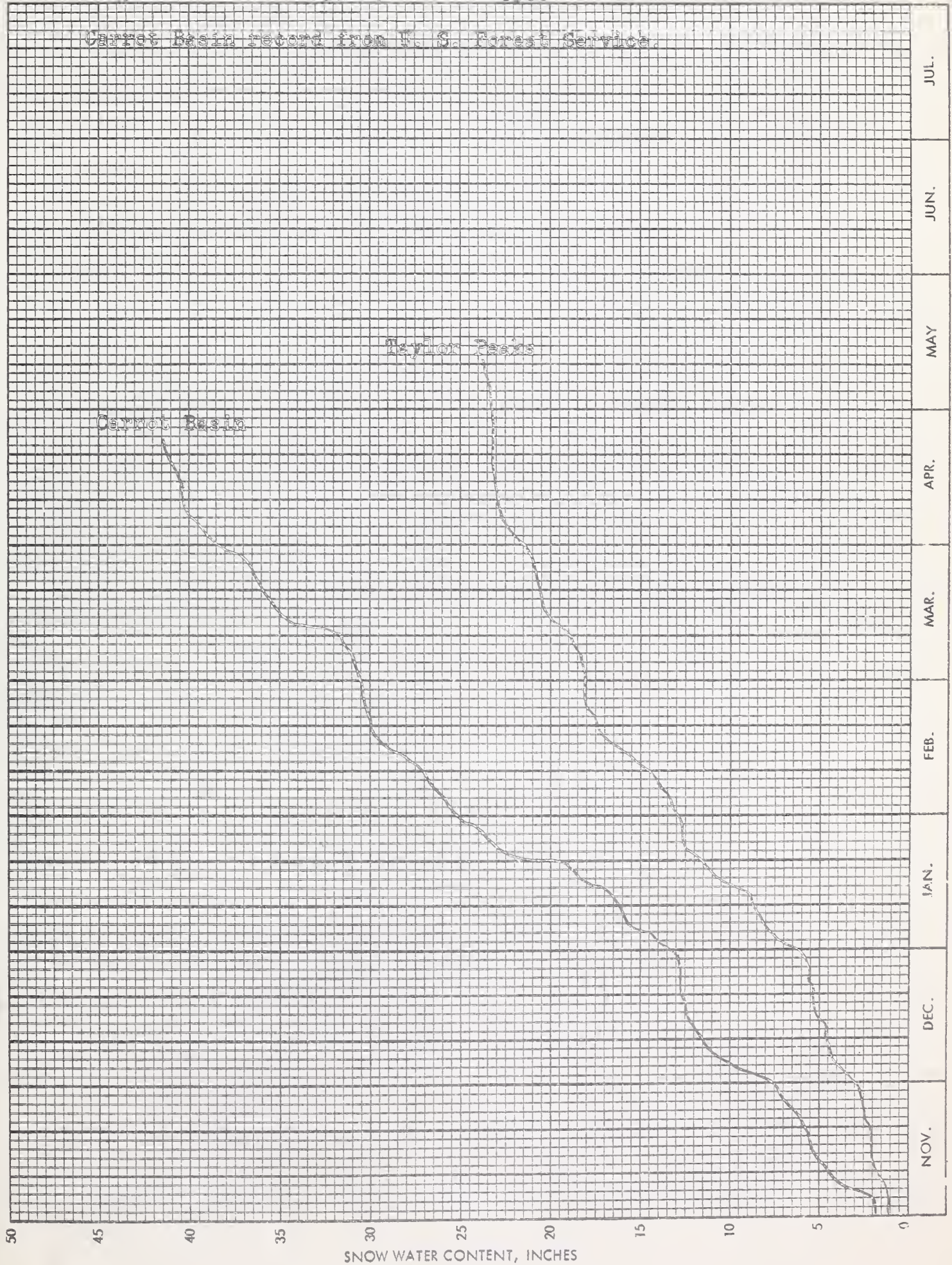


SNOW WATER CONTENT, INCHES

CARROT BASIN & TAYLOR PEAKS SNOW PILLOW DATA

AS OF JUNE 1, 1967

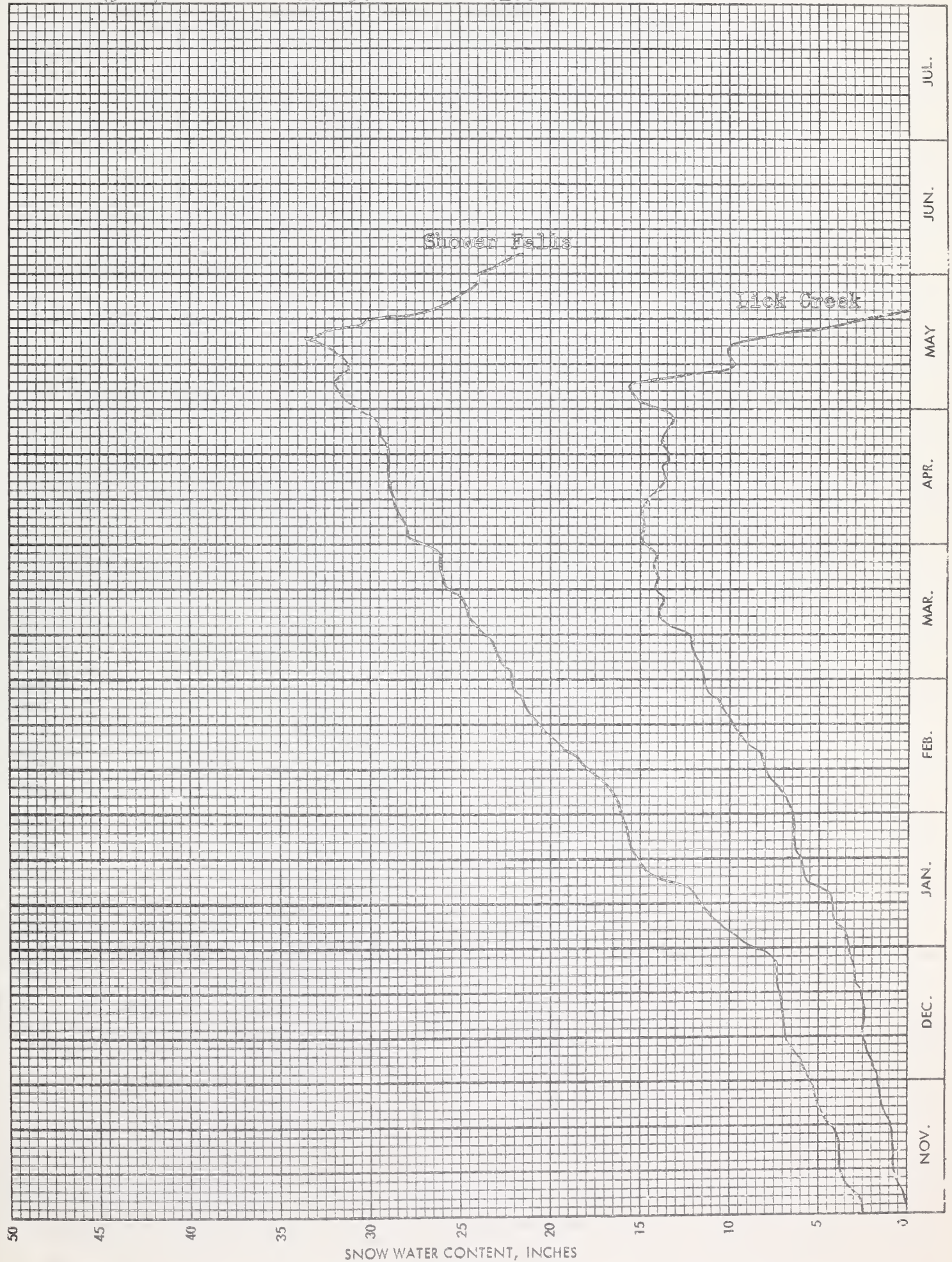
Carrot Basin	Sec.	18	T.	10S	R.	4E	No.	11E29	Drainage:	Gallatin
Taylor Peaks		26		9S		2E		11D13		
Carrot Basin	Lat.	44-58			Long.	111-58	Elev.	9000		
Taylor Peaks		45-01				111-27		8500		



LICK CREEK & SHOWER FALLS SNOW PILLOW DATA

AS OF JUNE 1, 1967

Lick Creek	Sec. <u>10</u>	T. <u>4S</u>	R. <u>6E</u>	No. <u>10D13</u>	Drainage: <u>Gallatin</u>
Shower Falls	<u>14</u>	<u>5S</u>	<u>6E</u>	<u>10D16</u>	
Lick Creek	Lat. <u>45-30</u>	Long. <u>110-58</u>	Elev. <u>6860</u>		
Shower Falls	<u>45-24</u>				

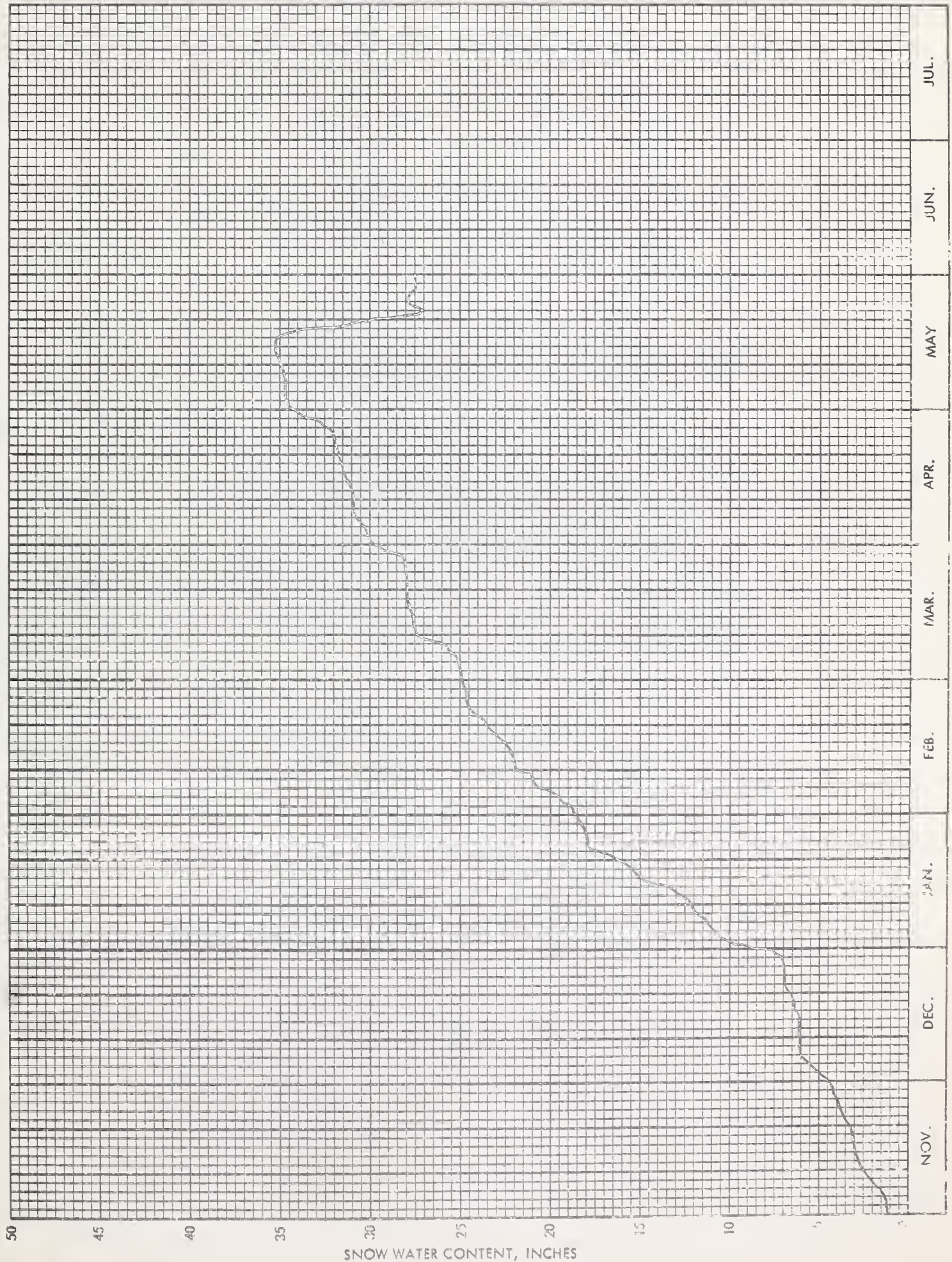


SPUR PARK
SNOW PILLOW DATA

AS OF JUNE 1, 1967

Sec. 20 T. 12N R. 9E No. 10006 Drainage: Judith

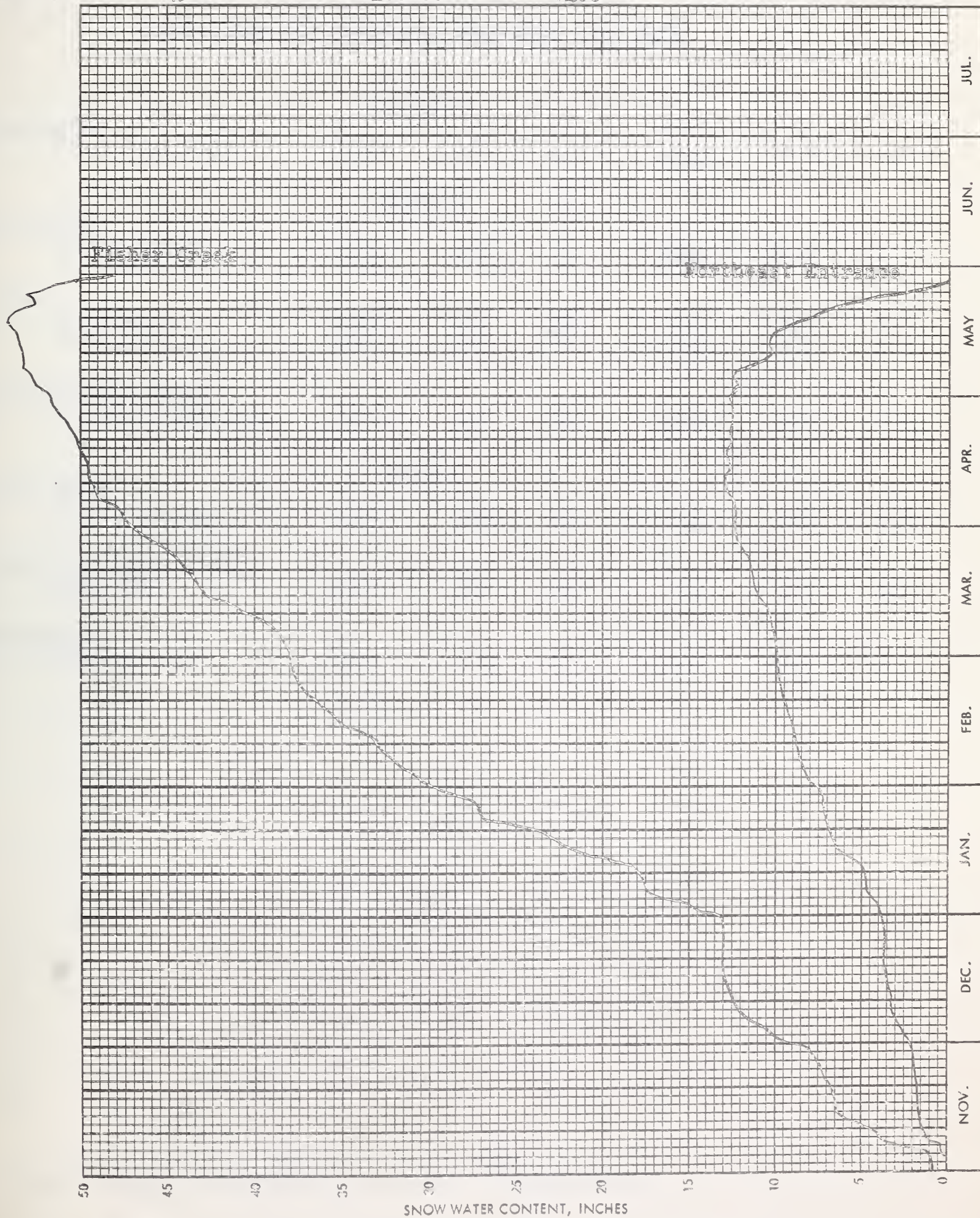
Lat. 46-47 Long. 110-37 Elev. 8000



FISHER CREEK & N.E. ENTRANCE SNOW PILLOW DATA

AS OF JUNE 1, 1967

Fisher Creek	Sec. <u>11</u>	T. <u>9S</u>	R. <u>14E</u>	No. <u>9D06</u>	Drainage: <u>Yellowstone</u>
N.E. Entrance	<u>33</u>	<u>9S</u>	<u>14E</u>	<u>10D07</u>	
Fisher Creek	Lat. <u>45-04</u>		Long. <u>109-57</u>	Elev. <u>9100</u>	
N.E. Entrance	<u>45-00</u>		<u>100-00</u>	<u>7400</u>	



SNOW SURVEY DATA

AS OF

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

CORRECTIONS TO PREVIOUSLY PUBLISHED 1967 DATA

January 1

Gallatin River

11E06	Twenty-One Mile	7150	1/2	40	<u>10.3</u>	3.8	8.0
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March 1

Flathead River

13A11	Beaver Lake	5900	3/5	71	<u>25.4</u>	17.5	-
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Clark Fork

13C04	Intergaard	6450	3/1	<u>29</u>	8.6	5.7	7.2
13C05	Southern Cross	6500	3/1	<u>27</u>	<u>8.2</u>	5.4	5.6

Upper Yellowstone River

10D07	Northeast Entrance	7400	3/6	39	<u>11.1</u>	5.0	7.5
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April 1

Jefferson River

12C06	Picnic Grounds	6500	3/31	23	<u>6.0</u>	2.4	4.8*
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Missouri River (Main Stem)

9A01	Rocky Boy	5200	4/1	31	<u>8.4</u>	3.3	4.3
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Kootenai River

15B16	Baree Midway	4600	3/31	120	<u>46.8</u>	35.0	-
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SNOW SURVEY DATA

AS OF

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

Corrections to Previously Published 1967 Data - cont.

May 1

Flathead River

13A16	Mineral Creek	4000	5/1	53	<u>22.2</u>	9.4	-
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Clark Fork

13B10	Coyote Hill	4200	<u>5/3</u>	<u>19</u>	<u>7.0</u>	0.4	2.3
13C18	Spring Gulch	6000	4/30	23	<u>6.4</u>	0.0	3.1*
13C01	Stuart Mountain	7400	4/30	<u>97</u>	40.3	28.6	30.4*
14B01	TV Mountain	6800	4/29	<u>62</u>	22.5	17.6	20.3*

Beaverhead River

13D09	Gold Stone	8100	5/2	68	<u>22.0</u>	9.9	-
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Jefferson River

12C09	Copper Mountain	7700	5/1	62	<u>18.6</u>	5.9	-
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Madison River

11E05	Hebgen Dam	6550	4/29	<u>34</u>	11.5	0.5	4.8
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Missouri River (Main Stem)

11C01	Boulder Mountain	7950	5/1	84	<u>29.3</u>	18.0	16.1*
10C07	Elk Peak	8000	5/2	<u>82</u>	28.7	17.2	16.5*

Sun-Marias-Teton Rivers

12B07	Goat Mountain	7000	4/30	54	<u>17.4</u>	9.2	10.3*
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Judith River

9C02	Avalanche	7100	5/4	94	<u>33.6</u>	21.7	-
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Upper Yellowstone

9D07	Cooke Station	8150	5/2	72	<u>28.6</u>	15.5	-
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Kootenai River

15B11	Baree Creek	5500	5/1	149	<u>65.6</u>	41.0	49.1
15B16	Baree Midway	4600	5/1	116	<u>51.2</u>	24.8	-

SNOW SURVEY DATA

AS OF MAY 15, 1967

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

COLUMBIA RIVER BASIN

KOOTENAI RIVER

15B11	Baree Creek	5500	5/15	131	65.5	26.7	42.3*
15B16	Baree Midway	4600	5/15	90	44.4	17.5	-
15B15	Baree Trail	3800	5/15	0	0.0	0.0	-
BC 10	Fernie	3500	5/15	2	0.7	0.0	-
BC 11	Glacier	4100	5/14	77	40.7	25.1	19.3*
14A11	Graves Creek	4300	5/16	42	19.5	5.6	-
BC 43	Gray Creek	5100	5/14	68	29.7	16.2	17.6*
BC 33	Kicking Horse	5400	5/15	48	20.5	9.4	7.8*
BC 10B	Morrissey Ridge	6100	5/15	90	41.6	-	-
BC 10A	New Fernie	4100	5/15	26	11.4	0.6	-
15A01	Red Mountain	6000	5/15	56	26.8	12.8	18.4*
BC 20A	Sullivan Mine	5100	5/15	38	18.0	5.4	6.8*
14A07	Weasel Divide	5450	5/16	88	43.2	23.6	32.6*

FLATHEAD RIVER

13A11	Beaver Lake	5900	5/16	71	33.3	-	-
13A17	Camp Misery	6400	5/17	136	68.2	-	-
14A09	Griffin Creek Divide	5150	5/15	28	12.6	-	-
13B12	Gunsight Lake	6300	5/16	119	58.6	-	-
14A03	Hell Roaring Divide	5770	5/15	85	41.8	16.7	-
13B13	Holbrook	4530	5/16	0	0.0	-	-
13A05	Marias Pass	5250	5/15	55	24.8	-	-
13A16	Mineral Creek	4000	5/14	37	16.5	-	-
13B07	North Fork Jocko	6330	5/16	117	58.2	26.4	-
13B01	Trinkus Lake	6100	5/16	112	57.9	-	-
13B11	Twin Creeks	3580	5/16	0	0.0	-	-
13B05	Upper Holland Lake	7000	5/16	103	50.6	-	-

CLARK FORK RIVER

13C13	Black Pine	7100	5/15	52	21.1	2.8	-
13C13	Black Pine Pillow	7100	5/15	SP	22.8	4.4	-
13C11	Fred Burr Pass	8000	5/17	85	37.1	-	-
15C10	Hoodoo Basin Pillow	6000	5/15	SP	58.6	-	-
13C04	Intergaard	6450	5/16	36	12.7	-	-
15B02	Lookout	5250	5/15	93	41.1	-	-
13C21	Lubrecht Forest No. 3	5450	5/13	13	4.5	-	-
13C12	Red Lion	7100	5/17	54	21.6	-	-
13C03	Skalkaho Summit	7260	5/17	74	33.1	12.4	23.0*
13C18	Spring Gulch	6000	5/14	16	5.8	-	-
13C01	Stuart Mountain	7400	5/14	91	40.5	17.5	-
14B01	TV Mountain	6800	5/13	54	20.6	-	-

SP - Snow pillow observation - water content only.

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NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MAY 15, 1967

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

BITTERROOT RIVER

13D02	Gibbons Pass	7100	5/15	67	28.8	2.6	20.1*
14C07	Lost Horse	5940	5/16	78	36.3	11.8	-
13D22	Saddle Mountain	7940	5/15	82	36.6	12.4	-
14C08	Twin Lakes	6510	5/16	108	49.3	21.4	-

SNOW SURVEY DATA

AS OF MAY 15, 1967

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

MISSOURI RIVER BASIN

BEAVERHEAD RIVER

11E04	Lakeview Canyon	6930	5/11	46	18.4	-	-
11E03	Lakeview Ridge	7400	5/11	44	17.0	-	-

JEFFERSON RIVER

12C09	Copper Mountain	7700	5/15	59	20.5	-	-
12C10	Nez Perce Creek	6500	5/15	27	8.6	-	-

MADISON RIVER

11E05	Hebgen Dam	6550	5/13	19	7.7	-	-
10E02	Norris Basin	7500	5/15	30	12.2	-	-
11E07	West Yellowstone	6700	5/13	25	11.1	-	-
11E07	West Yellowstone Pillow	6700	5/15	SP	9.4	-	-

GALLATIN RIVER

10D14	Arch Falls	7350	5/15	48	19.0	7.2	-
10D15	Bridger Bowl Pillow	7250	5/16	SP	36.1	15.7	-
10D04	Devil's Slide	8100	5/15	84	32.4	19.5	-
10D03	Hood Meadow	6600	5/15	25	10.5	0.0	-
10D13	Lick Creek Pillow	6860	5/15	SP	9.8	0.0	-
10D18	Maynard Creek Pillow	6210	5/16	SP	15.4	-	-
10D16	Shower Falls Pillow	8100	5/15	SP	33.1	22.9	-
11E06	Twenty-One Mile	7150	5/13	59	25.5	-	-

MISSOURI RIVER (Main Stem)

10C09	Deadman Creek	6450	5/15	33	15.0	0.0	-
10C01	Kings Hill	7500	5/15	60	23.6	8.2	-
12C02	Ten Mile Lower	6600	5/15	34	12.2	-	-
12C03	Ten Mile Middle	6800	5/15	49	19.3	-	-
12C04	Ten Mile Upper	8000	5/15	58	23.4	-	-

SUN-TETON-MARIAS RIVERS

13A15	Badger Pass	6900	5/16	114	54.3	-	-
12A01	Freight Creek	6000	5/16	51	25.4	-	-
12B07	Goat Mountain	7000	5/15	44	16.9	-	-
12B04	Wrong Creek	5700	5/16	36	18.5	-	-
12B03	Wrong Ridge	6800	5/16	59	29.1	-	-

SP = Snow pillow observation - water content only.

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NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MAY 15, 1967

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

JUDITH RIVER

9C02	Avalanche	7100	5/15	84	36.3	-	-
9C01	Crystal Lake	6100	5/15	41	18.8	-	-
9C03	Rock Creek	5600	5/15	24	11.4	-	-
10C06	Spur Park	8000	5/15	86	36.0	17.8	-
10C06	Spur Park Pillow	8000	5/15	SP	35.3	-	-

UPPER YELLOWSTONE RIVER

9D01	Camp Senia	7890	5/15	36	12.4	4.8	-
10E03	Canyon	7750	5/14	54	21.8	-	-
9D07	Cooke Station	8150	5/16	65	28.8	-	-
9D06	Fisher Creek	9100	5/16	126	54.3	-	-
9D06	Fisher Creek Pillow	9100	5/16	SP	54.4	-	-
10E04	Lake Camp	7850	5/17	30	11.9	-	-
10E01	Lupine Creek	7300	5/14	38	14.6	-	-
10D07	Northeast Entrance	7400	5/16	26	10.6	-	-
10D07	Northeast Entrance Pillow	7350	5/16	SP	10.6	-	-
10D10	Sacajawea	6550	5/16	37	16.5	-	-
9D04	Timberline Creek	8850	5/15	63	24.2	13.3	-
9D08	White Mill	8700	5/16	94	40.3	-	-

SP - Snow pillow observation - water content only.

SNOW SURVEY DATA

AS OF JUNE 1, 1967

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

COLUMBIA RIVER BASIN

KOOTENAI RIVER

BC 11	Glacier	4100	5/29	50	26.2	15.4	8.4*
14A11	Graves Creek	4300	6/2	10	4.6	0.0	-
BC 43	Gray Creek	5100	5/28	44	20.1	12.3	9.5*
BC 32	Marble Canyon	5000	5/29	8	3.4	0.0	-
15A01	Red Mountain	6000	6/2	18	10.2	0.8	6.6*
14A07	Weasel Divide	5450	6/1	56	31.5	8.6	-

FLATHEAD RIVER

13B03	Big Creek	6750	6/2	87	49.6	23.3	42.5*
13A17	Camp Misery	6400	5/29	108	55.7	-	-
13A02	Desert Mountain	5600	5/31	0	0.0	0.0	-
13B04	Fatty Creek	5500	6/2	27	14.8	0.0	6.0*
14A03	Hell Roaring Divide	5770	5/31	41	23.3	-	-
13B07	North Fork Jocko	6330	6/1	76	42.0	7.4	30.3*

CLARK FORK RIVER

13C13	Black Pine	7100	5/31	18	8.0	0.0	-
13C13	Black Pine Pillow	7100	5/31	SP	10.2	0.0	-
14C10	Heart Lake Trail	4800	5/26	20	9.4	-	-
15C10	Hoodoo Basin Pillow	6000	6/1	SP	40.2	-	-
15C01	Hoodoo Creek	5900	5/26	100	47.6	-	-
15B02	Lookout	5250	6/1	47	22.8	0.0	-
13C03	Skalkaho Summit	7260	5/31	41	23.4	1.2	14.1*
13C01	Stuart Mountain	7400	6/3	39	20.3	7.4	20.4*
14B01	TV Mountain	6800	6/3	18	8.0	1.9	-

BITTERROOT RIVER

13D02	Gibbons Pass	7100	5/29	30	15.4	0.0	6.7*
14C07	Lost Horse	5940	5/28	54	26.6	3.0	-
13D22	Saddle Mountain	7940	5/29	49	25.7	0.0	-
14C08	Twin Lakes	6510	5/28	75	39.0	9.4	-

SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF JUNE 1, 1967

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

MISSOURI RIVER BASIN

MADISON RIVER

11E25	Freezeout Lake	7200	5/25	0	0.0	-	-
11E26	Freezeout Mountain	8250	5/25	34	15.4	-	-
11E22	Lake Creek	6100	5/25	0	0.0	-	-
11E28	Lion Mountain Pillow	8760	5/25	SP	14.1	-	-
11E23	Meridian Creek	7000	5/25	2	0.8	-	-
11E24	Tapee Creek	8000	5/25	35	14.4	-	-
11E27	Upper West Fork	8750	5/25	26	11.0	-	-
11E07	West Yellowstone Pillow	6700	5/30	0	0.0	-	-

GALLATIN RIVER

10D14	Arch Falls	7350	6/1	20	9.0	1.4	-
10D15	Bridger Bowl Pillow	7250	5/30	SP	22.6	2.1	-
10D04	Devil's Slide	8100	6/1	51	24.0	14.5	-
10D03	Hood Meadow	6600	6/1	0	0.0	0.0	-
10D13	Lick Creek Pillow	6860	5/25	SP	0.0	0.0	-
10D18	Maynard Creek Pillow	6210	5/31	SP	4.1	-	-
10D16	Shower Falls Pillow	8100	6/1	SP	23.6	15.6	-
11D13	Taylor Peaks Pillow	8500	Delayed report				

MISSOURI RIVER (Main Stem)

10C09	Deadman Creek	6450	5/31	0	0.0	0.0	-
10C01	Kings Hill	7500	5/31	32	15.5	0.4	-

JUDITH RIVER

9C02	Avalanche	7100	5/31	50	24.4	-	-
9C01	Crystal Lake	6100	5/31	0	0.0	-	-
9C03	Rock Creek	5600	5/31	0	0.0	-	-
10C06	Spur Park	8000	5/31	56	29.2	8.0	0
10C06	Spur Park Pillow	8000	5/31	SP	27.4	-	-

SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF JUNE 1, 1967

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

UPPER YELLOWSTONE RIVER

9D01	Camp Senia	7890	5/31	10	3.9	0.0	-
9D07	Cooke Station	8150	5/29	37	18.2	-	-
9D06	Fisher Creek	9100	5/29	94	45.9	-	-
9D06	Fisher Creek Pillow	9100	5/29	SP	47.2	-	-
10D06	Independence	8000	6/2	22	10.5	-	-
10D12	Monument Peak	9000	6/2	57	31.2	-	-
10D07	Northeast Entrance	7400	5/29	2	0.9	-	-
10D07	Northeast Entrance Pillow	7350	5/29	0	0.0	-	-
9D04	Timberline Creek	8850	5/31	32	12.4	4.3	-
9D08	White Mill	8700	5/29	67	33.2	-	-

JEFFERSON RIVER

12C09	Copper Mountain	7700	6/1	13	4.8	-	-
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SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SOIL MOISTURE DATA

AS OF

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	** AVERAGE

ADDITIONS AND CORRECTIONS TO PREVIOUSLY PUBLISHED 1967 DATA

January 1

Kootenai

14A10M	Murphy Lake R.S.	3000	48	22.6	1/5	20.3	19.3	-
15A02M	Raven R.S.	3050	48	23.0	1/3	21.2	19.7	-

Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	1/5	5.2	9.1	8.2
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February 1

Clark Fork

13C15M	Georgetown Lake	6450	48	9.0	1/31	4.7	3.7	-
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March 1

Clark Fork

13C15M	Georgetown Lake	6450	48	9.0	2/27	5.2	3.6	3.0
13B19M	Seeley Lake R.S.	4030	48	11.9	3/7	10.3	9.9	-

Gallatin

11E06M	Twenty-One Mile	7150	48	10.0	2/28	2.8	3.0	2.8
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Yellowstone

10D11M	Battle Ridge	6020	48	17.6	3/1	13.9	13.0	12.9
10D07M	Northeast Entrance	7350	48	9.4	3/8	5.2	7.5	7.1

April 1

Gallatin

10D15M	Bridger Bowl	7250	48	17.0	3/31	15.5	16.7	-
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May 1

Clark Fork

13C13M	Black Pine	7100	48	10.0	4/27	7.2	5.5	-
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**AVERAGE FOR PERIOD OF RECORD

SOIL MOISTURE DATA

AS OF JUNE 1, 1967

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	** AVERAGE

COLUMBIA RIVER BASIN

Kootenai

15B15M	Baree Trail	3800	48	7.5	5/31	6.3	-	-
14A10M	Murphy Lake R.S.	3000	48	22.6			22.1	-
15A02M	Raven R.S.	3050	48	23.0	5/31	22.0	-	-

Flathead

13A02M	Desert Mountain	5600	54	8.4	5/31	9.8	8.9	8.8
13A05M	Marias Pass	5250	54	6.5	5/31	6.2	6.1	5.8

Clark Fork

13C13M	Black Pine	7100	48	10.0	5/31	9.2	8.2	-
13C15M	Georgetown Lake	6450	48	9.0	6/1	10.0	8.3	7.9
13B19M	Seesley Lake R.S.	4030	48	11.9	6/5	11.5	-	10.3
13C03M	Skalkaho Summit	7260	48	10.8	5/31	10.1	9.8	-

Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	5/29	6.8	6.8	7.0
14C05M	Lolo Pass	5250	48	10.6	5/29	9.6	9.8	10.4

MISSOURI RIVER BASIN

Beaverhead

11E13M	Lakeview	6700	48	15.3	6/1	15.6	13.8	14.7
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Madison

11D04M	Red Bluff	4800	40	4.7	6/1	1.8	2.1	2.4
11E07M	West Yellowstone	6700	48	6.5	5/28	3.2	-	-

Gallatin

10D15M	Bridger Bowl	7250	48	15.8	5/30	15.5	16.5	-
11D02M	College Site	4856	54	14.5	6/2	10.9	13.7	11.2
10D13M	Lick Creek	6860	48	18.8	6/1	19.2	18.7	-
11E06M	Twenty-One Mile	7150	48	10.0	5/28	10.3	9.6	9.9

Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	5/31	11.0	11.0	10.9
12C08M	Stemple Pass	6350	48	5.9	5/29	5.1	5.0	5.2

Yellowstone

10D11M	Battle Ridge	6020	48	17.6	5/31	16.5	15.1	15.3
10D07M	Northeast Entrance	7350	48	9.4	5/29	9.1	9.7	9.1

** AVERAGE FOR PERIOD OF RECORD

RESERVOIR STORAGE DATA

AS OF MAY 31, 1967

(1000 Acre Feet)

			USEABLE STORAGE			
BASIN	RESERVOIR	USEABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE	
COLUMBIA RIVER BASIN						
Flathead	Hungry Horse	3,428.0	2,076.0	3,046.0	2,793.6**	
	Flathead Lake	1,791.0	1,400.0	1,509.0	1,559.2	
	Camas (Sum of 4)	45.2	38.5	34.3	41.7	
	Mission Valley (Sum of 8)	100.3	44.6	61.4	68.8	
Clark Fork	Georgetown Lake	31.0	22.0	21.7	24.0	
	Noxon Rapids	334.6		292.4	-	
Bitterroot	Como	34.9	24.2	27.8	29.0	
	Painted Rocks	31.7	33.4	32.4	32.4	
MISSOURI RIVER BASIN						
Beaverhead	Clark Canyon	328.9	120.7	134.7	-	
	Lima	84.0	43.9	70.1	58.1	
Ruby	Ruby	38.8		-	35.4**	
	Hebgen Lake	377.5	281.4	354.6	270.5	
	Ennis Lake	41.0	38.6	39.4	35.6	
Gallatin	Middle Creek	8.0		8.2	6.4**	
Missouri	Canyon Ferry	2,043.0	1,347.0	1,528.0	1,756.8**	
	Hauser & Helena	61.9	59.6	59.0	53.2	
	Lake Helena	10.4	9.6	9.4	7.6	
	Holter Lake	81.9	74.0	77.4	72.8	
	Smith River	10.7	10.8	-	8.7	
	Ackley Lake	5.8		-	4.2	
	Durand	7.0	6.6	-	6.4	
	Martinsdale	23.1	14.9	-	15.0	
	Deadman's Basin	72.2	68.2	-	46.8**	
	Fort Peck	19,410.0	16,010.0	16,560.0	11,651.7	
	Sun	Gibson	105.0	94.3	95.0	94.4
		Willow Creek	32.3	21.8	27.3	27.0
		Pishkun	32.0	32.2	27.0	28.4
	Marias	Lower Two Medicine			-	9.0
Four Horns		19.2	12.0	15.0	11.6	
Swift				-	29.6	
Lake Frances		112.0	96.8	100.9	104.4	
Tiber		1,347.0	632.8	752.9	729.5**	
Milk	Fresno	127.2	127.8	105.1	107.1	
	Nelson	66.8	53.5	54.7	40.7	
	Lake Sherburne	66.1	14.0	31.8	35.2	
Yellowstone	Mystic Lake	20.8	11.7	6.0	6.3	
	Tongue River	68.0	56.1	61.3	28.7	
	Cooney	27.5	17.2	23.4	17.9**	
Big Horn	Yellowtail	1,409.0	773.8	437.9	-	

Agencies Cooperating in Collecting Data Contained in this Bulletin

U. S. Forest Service
Region 1, Missoula, Montana

U. S. Geological Survey
Helena, Montana

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Omaha, Nebraska

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana

U. S. Bureau of Sports Fisheries
and Wildlife
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

U. S. Soil Conservation Service
Montana, Wyoming, Idaho

Soil and Water Conservation Districts
Montana Counties

U. S. Bonneville Power Administration
Portland, Oregon

U. S. National Park Service
Yellowstone National Park
Glacier National Park

Montana Power Company
Butte, Montana

State Water Conservation Board
Helena, Montana

North Montana Branch Station
Agricultural Experiment Station
Havre, Montana

Montana State University
Agricultural Experiment Station
Bozeman, Montana

University of Montana
School of Forestry
Missoula, Montana

Johnson Flying Service, Inc.
Missoula, Montana

Water Rights Branch, Dept. of
Lands and Forests
Victoria, British Columbia

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